

# Record of Proceedings, Including Reasons for Decision

In the Matter of

Proponent *La Corporation de l'École Polytechnique*

Subject Application to Renew the Subcritical Nuclear  
Assembly Operating Licence

Date of Hearing May 18, 2006

## RECORD OF PROCEEDINGS

Applicant: *La Corporation de l'École Polytechnique*

Address/Location: 2500 Chemin de Polytechnique, Montréal, Quebec H3C 3A7

Purpose: Application to renew the subcritical nuclear assembly operating licence

Application received: February 28, 2006

Date of hearing: May 18, 2006

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th Floor, Ottawa, Ontario

Members present: A.R. Graham, Presiding Member  
C.R. Barnes  
J.A. Dosman  
M. J. McDill

Secretary: M.A. Leblanc  
Recording Secretary: P.D. Bourgeau  
General Counsel: J. Lavoie

<b>Applicant represented by</b>	<b>Document number</b>
• J. Koclas, Professor and Director, responsible for the sub-critical reactor	CMD 06-H11.1 CMD 06-H11.1A
<b>CNSC Staff</b>	<b>Document number</b>
• P. Thompson • L. Colligan • H. Rabski	CMD 06-H11 CMD 06-H11.A (confidential)
<b>No Intervenors</b>	

**Licence:** Renewed  
**Date of decision:** May 18, 2006

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## Introduction

1. *La Corporation de l'École Polytechnique de Montréal* (“the *École Polytechnique*”) has applied to the Canadian Nuclear Safety Commission (“CNSC”)<sup>1</sup> to renew the operating licence for its subcritical nuclear assembly (the facility) for a period of ten years. The current licence (PERR-9/2006) expires on June 30, 2006.
2. The facility is used in a nuclear engineering training course and is located on the campus of the *Université de Montréal* in Montréal, Quebec.
3. The facility is a subcritical cell composed of an assembly of rectangular graphite blocks. Natural uranium bars and sealed neutron sources are inserted into the graphite blocks in order to study the resulting neutron multiplication. During experiments, neutron and gamma radiation levels do not exceed 15 microsieverts/hour ( $\mu\text{Sv/h}$ ), no fuel is burned and no fission product is produced.

## Issues

4. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*<sup>2</sup> (NSCA):
  - a) if the *École Polytechnique* is qualified to carry on the proposed activity; and
  - b) if, in carrying on that activity, the *École Polytechnique* would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security, and would take appropriate steps to meet Canada’s international obligations.

## Public Hearing

5. The Commission, in making its decision, considered information presented for a public hearing on May 18, 2006, in Ottawa, Ontario. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*.<sup>3</sup> The Commission received written submissions and heard oral presentations from the *École Polytechnique de Montréal* (CMD 06-H11.1 and CMD 06-H11.1A) and from CNSC staff (CMD 06-H11 and CMD 06-H11.A). There were no intervenors.

## Decision

6. After considering the matter, as described in more detail in the following sections, the Commission finds that the *École Polytechnique* is qualified to carry on the activity that the licence will authorize and that, in carrying on that activity, it will make adequate provision

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<sup>1</sup> In this Record of Proceedings, the Canadian Nuclear Safety Commission is designated as “CNSC” when referring to the organization and its staff in general, and as the “Commission” when referring to the tribunal component.

<sup>2</sup> S.C. 1997, c.9.

<sup>3</sup> S.O.R./2000-211.

for the protection of the environment, the health and safety of persons and the maintenance of national security and take appropriate measures to implement Canada's international obligations.

7. 

Consequently, pursuant to section 24 of the *Nuclear Safety and Control Act*, the Commission renews *La Corporation de l'École Polytechnique*'s subcritical nuclear assembly operating licence. The licence No. PERFP-9.00/2016, is valid from July 1, 2006, to June 30, 2016.
8. The Commission includes in the licence the conditions recommended by CNSC staff, as set out in the draft licence attached to CMD 06-H11. The Commission also adds the following condition:
  - The licensee must notify CNSC staff of when the licensee plans to use the facility.

### **Issues and Commission Findings**

9. In making its decision under pursuant to 24 of the NSCA, the Commission considered a number of issues relating to the *École Polytechnique*'s qualifications to carry out the proposed activities, and the adequacy of the proposed measures for protecting the health and safety of persons, the environment, national security and international obligations to which Canada has agreed. The Commission's findings presented below are based on the Commission's consideration of all the information and submissions available for reference on the record for the hearing.

### ***Radiation protection***

10. To assess the adequacy of provisions for protecting the health and safety of persons at the *École Polytechnique* facility, the Commission considered the past performance and programs of the *École Polytechnique* in the area of radiation protection.
11. In this regard, CNSC staff is satisfied that the *École Polytechnique* radiation protection program fully meets the CNSC's requirements and expectations, and that it can be expected to do so during the proposed 10-year licence period. CNSC staff noted that the radiation protection program at this facility follows *École Polytechnique* common standards, and that personal dosimeters are managed by its radiation protection officers.
12. When questioned by the Commission on student radiation protection, the *École Polytechnique* responded that as a rule students wear thermoluminescent dosimeters. The *École Polytechnique* also stated that students wear gloves and alpha detectors when natural uranium bars inserted into graphite blocks are being handled. The *École Polytechnique* added that to its knowledge, which dates to 1974, there have been no radiation accidents involving students.

13. CNSC staff noted to the Commission that no students have been exposed to any type of radiation during materials handling or experiments involving the subcritical nuclear assembly. In addition, the sealed sources used in the reactor core are handled by qualified operators and not students.
14. With respect to the protection of persons, CNSC staff further noted that no incidents have been reported at the facility during the current licence term. In addition, occupational radiation exposure is very low and therefore acceptable.
15. CNSC staff added that radiation dose rates at the facility are very low and that nobody working there is classified as a nuclear energy worker.
16. Based on this information, the Commission is satisfied that the *École Polytechnique* has made, and will continue to make, adequate provision for the protection of persons from radiation at the facility.

#### ***Environmental protection***

17. To determine whether the *École Polytechnique* will make adequate provision to protect the environment, the Commission considered the potential for the facility operations to adversely affect the environment.
18. CNSC staff noted that there is no risk to the public or the environment, since the facility does not release radioactive emissions into the air or in liquid form. In addition, the facility produces neither solid nor liquid radioactive waste.
19. Based on this information, the Commission finds that the *École Polytechnique* has made, and will continue to make, adequate provision concerning its subcritical nuclear assembly for the protection of the environment.

#### ***Facility operation***

20. The Commission examined the operating performance of the facility at the *École Polytechnique*.
21. CNSC staff noted that it had examined the facility's annual compliance reports, communicates regularly with facility managers and conducts regular compliance inspections of the facility. Based on its findings, the facility has been operated competently.
22. Based on the above information and considerations, the Commission finds that the subcritical nuclear assembly at the *École Polytechnique* has been operated safely and that current programs and past performance indicate that the facility will continue to be operated safely during the proposed 10-year licence period.

### ***Training and qualifications***

23. The Commission examined the training and qualifications of facility staff as an indication of the Licensee's qualifications to carry out the activities under the proposed licence.
24. It added that a formal training program is not required by the CNSC since operators are fully qualified and the *École Polytechnique* fulfills the conditions of the current Licence regarding operator training.
25. Based on this information, the Commission finds that the *École Polytechnique* is qualified to operate the subcritical nuclear assembly.

### ***Nuclear safety and security***

26. CNSC staff noted that the facility has an acceptable safety program. The subcritical nuclear assembly is located in a shielded room and monitored by *École Polytechnique* security services.
27. The Commission is therefore satisfied that *École Polytechnique* is taking the steps necessary to adequately maintain the physical security of the subcritical nuclear assembly.

### ***Safeguards***

28. CNSC staff noted that the safeguards program at the *École Polytechnique* facility meets, and is expected to continue to meet, all applicable requirements.
29. The Commission therefore finds that the *École Polytechnique* has made, and will continue to make, adequate provision in the area of safeguards at the facility that are necessary for maintaining national security and respecting the international agreements that Canada has signed.

### ***Decommissioning and financial guarantees***

30. In order to ensure that adequate resources will be available to meet the regulatory requirements for safety, environmental protection and security during the future decommissioning of the facility, the Commission requires that an adequate plan and financial guarantees for decommissioning be in place and maintained in an acceptable manner.
31. CNSC staff noted that the revised safety report, including details on eventual decommissioning of the facility, is acceptable. The eventual decommissioning of the facility consists of simply transporting the recovered sealed sources to the *Université de Montréal*, and the uranium bars to Atomic Energy of Canada Limited.

32. CNSC staff noted that, given the low estimated costs of the eventual decommissioning, financial guarantees are not necessary.
33. Based on this information, the Commission is satisfied that the *École Polytechnique* is taking appropriate steps to ensure the CNSC's requirements for decommissioning planning are met in a timely manner.

#### ***Canadian Environmental Assessment Act***

34. CNSC staff stated that an environmental assessment, pursuant to the requirements of the *Canadian Environmental Assessment Act*<sup>4</sup> (CEAA), is not required before the Commission may make a decision on the application for an unamended licence renewal to be granted under subsection 24(2) of the NSCA, which is not covered in the *CEAA Law List Regulations*.<sup>5</sup>
35. The Commission agrees and finds that no environmental assessment pursuant to the CEAA is required before the Commission may make a decision on the subcritical nuclear assembly operating licence renewal application.

#### ***Licence term and interim reporting***

36. The *École Polytechnique* applied for a 10-year renewal of its licence. CNSC staff recommended that the Commission accept and grant the proposed 10-year term. Staff noted that, based on the facility's plans and the fact that procedures and compliance programs will remain in place, the risks posed to health, safety, security and the environment, as well as to respect of Canada's international commitments regarding the peaceful use of nuclear energy during operation of the facility are minimal and manageable.
37. With respect to the mid-term status report, CNSC staff instead suggests appearing before the Commission if a specific incident occurs during operation of the facility. To support this, CNSC staff submitted that the facility is rarely operated, that it produces no environmental emissions and only low doses of radiation.
38. When questioned by the Commission about facility inspection plans if a 10-year licence were granted, CNSC staff responded that there would be a combined annual inspection with the SLOWPOKE reactor as well as individual inspections whenever the facility is used.
39. The Commission agrees and finds that a mid-term status report is not necessary; however, CNSC staff must conduct an annual inspection. The Commission also adds to the licence the condition that the *École Polytechnique* must notify CNSC staff of its intention to use

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<sup>4</sup> S.C. 1992, c. 37.

<sup>5</sup> S.O.R./94-636.



the facility within a reasonable time frame so that an individual inspection can be organized if deemed necessary by CNSC staff.

### **Conclusion**

40. The Commission has considered the information and submissions of the applicant and CNSC staff as presented in the material available for reference on the record, as well as the oral and written submissions provided at the hearing.
41. Pursuant to section 24 of the NSCA, the Commission therefore renews the operating licence for *La Corporation de l'École Polytechnique's* subcritical nuclear assembly. The licence, No. PERR-9.00/2016, is valid from July 1, 2006, to June 30, 2016, unless suspended, amended, revoked or replaced.
42. The Commission requests that CNSC staff conduct annual inspections. In addition, the Commission includes in this decision a condition that the Licensee must notify CNSC staff of its intention to use the facility so that the staff may decide whether an individual inspection is necessary.

Marc A. Leblanc  
Secretary  
Canadian Nuclear Safety Commission

Date of decision: May 18, 2006

Date of release of Reasons for Decision: June 27, 2006